

FOR THE RECORD

Alternative isotope sources

Accelerator-driven photo-fission could be used to generate molybdenum-99 to meet medical demand in Canada and abroad, concluded a task force struck to explore alternatives to medical-isotope production following controversies surrounding the 51-year-old National Research Universal reactor and the cancellation of its replacement with a pair of flawed Multipurpose Applied Physics Lattice Experiment reactors (*CMAJ* 2008;178[5]:536-8, *CMAJ* 2008;178[6]:668 and *CMAJ* 2008;178[13]:1648).

The Canadian reactor was again in the news in December 2008, when a planned shutdown that was extended 2 days coincided with a shortage of medical isotopes in Canada resulting in many medical and diagnostic procedures being cancelled. An Atomic Energy of Canada Ltd. spokesman told media that the shortage stemmed from the shutdown of European nuclear reactors.

The new proposal calls for the use of high-energy photons to split natural or depleted uranium (rather than the weapons-grade uranium used in the Chalk River reactor) to generate molyb-

dium-99 for processing by US firms into technetium-99m, the isotope used in clinics. Canada lacks the processing capacity and its market is too small for any one to consider building such a generator, the report states.

Because such machines can be turned on and off and have lower decommissioning costs, they're an "attractive" option, states the task force report *Making Medical Isotopes* (<http://admin.triumf.ca/facility/5yp/comm/Report-vPREPUB.pdf>).

The Task Force on Alternatives for Medical-Isotope production, convened by the TRI-University Meson Facility and the University of British Columbia, with the support of the federal department of Natural Resources, also issued several cautionary notes.

"Several laboratory experiments are needed to establish efficiencies, equivalency of products, reliability of operation, and capacity," it states.

There are also major technical hurdles, such the lack of a "conceptual design of a U-238 target system for efficient photo-fission and dissipation of the generated thermal power."

As well, a 1-beam 2–3-megawatt machine would be needed to generate supply for 5%–7% of the North American market, and 6 would be needed if Canada was to maintain its 30%–50% stake.

The National Research Reactor produces about half of the world's medical isotope supply and all isotopes used in the roughly 1.5 million nuclear medicine procedures undertaken in Canada annually.

Canada would also need to obtain regulatory approval for accelerator-generated isotopes, and build the facilities at a cost of \$50 million to \$125 million apiece, depending on the technologies chosen.

There would also be \$50 million for capital costs associated with the production cycles, including "the manufacturer of targets for irradiation, storage of radioactive waste from target processing, and hot-cell to recover and refine molybdenum-99." — Wayne Kondro, *CMAJ*

Lack of competition

Public drug plans, businesses and individual payers could reap savings of up to \$800 million a year if there were

more competition in the sale of generic drugs, according to a federal Competition Bureau report.

The bulk of potential savings — up to \$600 million — could be reaped by businesses, private drug plans and individuals who pay out of pocket, states the report, *Benefiting from Generic Drug Competition in Canada: The Way Forward*, which was released Nov. 25, 2008.

But public plans could cut costs by \$200 million a year, which would be available for reinvestment in the health care system. Potential savings would mount as more drugs come off patent protection, according to the report, which outlines strategies for increasing competition.

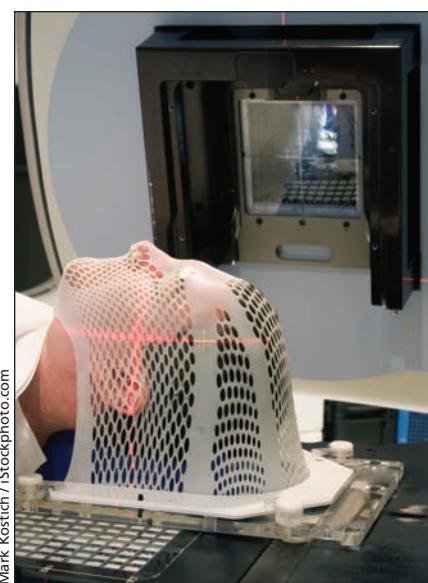
An earlier report from the bureau found that although there is generic drug competition in Canada at the pharmacy level, savings from rebates and allowances were not being passed on to customers. Ontario's 2006 Transparent Drug System for Patients Act lowered the cost of generic drugs for both the Ontario public drug plan and, effectively, Quebec's plan. But with the exception of Quebec, private payers did not benefit, according to the report (www.competitionbureau.gc.ca/epic/site/cb-bc.nsf/en/02754e.html).

Since the Act was passed, some brand name drug companies have lowered prices to compete with generics. Prescription drugs are the second-largest health care cost in Canada (accounting for \$19 billion in 2007), and from 2006–2007 generic drug expenditures alone increased by 20% to \$4.1 billion, the report states. — Ann Silver-sides, *CMAJ*

Midwest medicinal marijuana

The state of Michigan has become the 14th in the United States, and the first in the American Midwest, to approve the use of marijuana for registered patients with debilitating medical conditions.

The proposition allows for medicinal marijuana use by patients suffering from cancer, glaucoma, HIV/AIDS, hepatitis C and other conditions approved by the Michigan Department of



Mark Kostich / iStockphoto.com

Officials at the TRI-University Meson Facility recommend that Canada generate isotopes through photo fission for use in medical therapies. Here, a patient receives radiation therapy for a brain tumour.

Community Health, which has been given until March 2009 to establish a program for registering users, who will be restricted to 2.5 ounces of marijuana and 12 plants, which must be kept within locked facilities.

"This represents a thundering rejection of the draconian and unscientific policies of the last 10 years," says Bruce Mirken, director of communications for the Marijuana Policy Project, a Washington, District of Columbia advocacy group for marijuana use. "One in 4 Americans now lives in a state that approves medical marijuana."

The other states that have passed such laws are Alaska, California, Colorado, Hawaii, Maine, Maryland, Montana, Nevada, New Mexico, Oregon, Rhode Island, Vermont and Washington. — Lesley Ananny, Ottawa, Ont.

Bamako call to action

National governments have been urged to allocate 2% of the budgets of their health ministries to research under a "call to action" issued by the Global Ministerial Forum on Research for Health held in Bamako, Mali, from Nov. 17–19, 2008.

In a bid to establish targets for increasing investment in health research, representatives from 53 of the 69 participating nations that inked the Call to Action in Bamako, Mali, also urged that at least 5% of all health-related

developmental assistance funding should be ticketed for health research, (www.tropika.net/svc/specials/bamako_2008/call-for-action/call).

Signatories to the call to action also urged that the research investments should be "determined by national and regional agendas and priorities, with due attention to gender and equity considerations" and that more attention be paid to research that "addresses the health challenges that disproportionately affect, the

poor, marginalized and disadvantaged."

Among other measures urged was the establishment of Nov. 18 each year as a "World Day of Research for Health" and ministerial gatherings every 4 years to discuss progress. A similar Call for Action was issued from the Global Ministerial Summit on Health Research held in Mexico in 2004. — Wayne Kondro, CMAJ

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Reuters / Daniel Flynn

An elderly man sits inside his hut near Bamako, Mali, where international agencies recently issued a call for more health research related to conditions that afflict the poor and disadvantaged.

Briefly

Detailing: The United States Court of Appeals for the First Circuit has upheld the rights of states to prohibit the sale of computerized data showing which doctors prescribe what drugs. The purchase of such prescription data, based on information gathered from pharmacies and companies that manage drug benefits for employers, has become a highly lucrative industry as pharmaceutical firms seek any kind of edge that might indicate which doctors are more receptive to company sales pitches. In rejecting a bid from data-mining companies to block implementation of a New Hampshire law that prohibits the

sale of such information, US Court of Appeals Judge Bruce Marshall Selya wrote that it was entirely reasonable to constrain "overzealous prescription of more costly brand-name drugs regardless of both the public health consequences and the probable outcome of a sensible cost/benefit analysis," (*IMS Health Inc. and Verispan, LLC v. Kelly A. Ayotte, New Hampshire Attorney General*, available at www.ca1.uscourts.gov/).

Denial: Ousted South Africa President Thabo Mbeki's refusal to acknowledge the viral cause of AIDS and the usefulness of antiretroviral drugs in treating the disease caused the premature deaths

of more than 330 000 people between 2000–2005, according to modelling by Harvard researchers (*Acquir Immune Defic Syndr* 2008;49:410-5). The study also estimates 35 000 babies were born with HIV as a consequence of Mbeki's policies, which promoted the use of alternative remedies such as lemon juice, beetroot and garlic.

Death with dignity: The state of Washington will become the second American jurisdiction to adopt an assisted-suicide law after approving a ballot proposition (by a 59% to 41% margin) known as Initiative 1000, which permits terminally ill, competent adults who are predicted to have fewer than 6 months